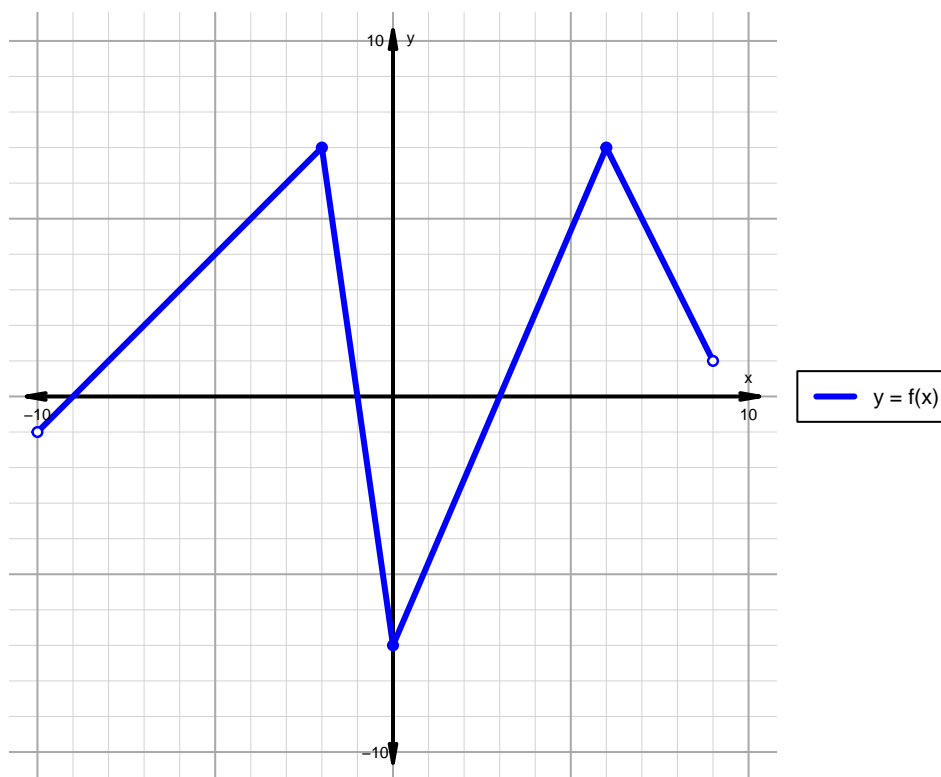


Name: \_\_\_\_\_

Date: \_\_\_\_\_

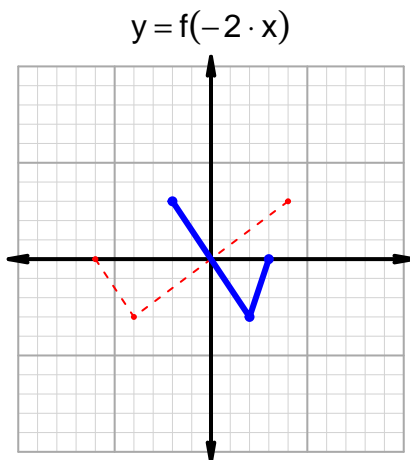
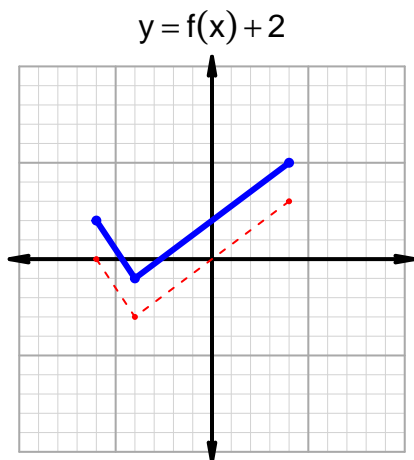
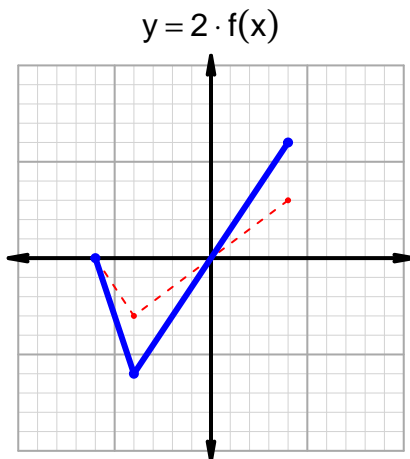
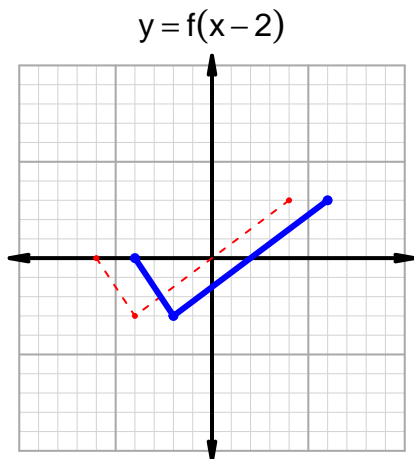
**Intervals, Transformations, and Slope Solution (version 49)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-9, -1) \cup (3, 9)$
Negative	$(-10, -9) \cup (-1, 3)$
Increasing	$(-10, -2) \cup (0, 6)$
Decreasing	$(-2, 0) \cup (6, 9)$
Domain	$(-10, 9)$
Range	$(-7, 7)$

## Intervals, Transformations, and Slope Solution (version 49)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 44$  and  $x_2 = 69$ . Express your answer as a reduced fraction.

$x$	$g(x)$
15	44
44	55
55	69
69	15

$$\frac{f(69) - f(44)}{69 - 44} = \frac{15 - 55}{69 - 44} = \frac{-40}{25}$$

The greatest common factor of -40 and 25 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-8}{5}$$